

(12) **United States Patent**
Paine et al.

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(54) **INTEGRATED STORAGE AND DELIVERY
SYSTEMS FOR NUTRITIONAL
COMPOSITIONS**

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(76) Inventors: **Greg Langdon Paine**, Edina, MN
(US); **Sandra Lee Gray**, Deptford, NJ
(US)

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Primary Examiner — Bhisma Mehta
Assistant Examiner — Benjamin Koo
(74) *Attorney, Agent, or Firm* — K&L Gates LLP

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(57) **ABSTRACT**

Apparatuses, kits and methods useful in the storage and
delivery of nutritional compositions and other fluids are
described. In a general embodiment, an integrated storage
and delivery system for nutritional compositions comprises
a container defining a chamber, a finish, and a penetrable
seal. The finish defines an opening and the penetrable seal
separating the chamber from an external environment. A
spike assembly is attached to the container. The spike
assembly including a cap and a spike. The cap is engaged
with the finish of the container and the spike defines a
projection having a distal end defining a second opening.
The projection is moveable between a first position in which
the distal end is adjacent a first side of the penetrable seal
and a second position in which the distal end is adjacent a
second side of the penetrable seal.

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